

ABSTRACT OF THE DISCLOSURE

A method of heat treatment of glass materials and natural materials specifically of volcanic origin according to which the treated material is exposed to microwave radiation at a frequency range from 1 MHz to 10 GHz and temperature range from the ambient temperature to 1800°C in a batch or continuous process. The glass or natural material subjected to a melting and/or refining process contains an inert additive elected from the group comprising carbides, nitrides or borides in an amount from 1 to 100 g preferably 5 to 50 g per 1 kg of the glass or natural material. The apparatus consists substantially of a microwave furnace comprising an outer shell (8.2) provided with a cover (10) and an inner shell (8.1) and at least one micro wave generator (1.1, 1.2, 1.3, 1.4) with double emission and total power from 0.1 to 1 kW per 1 kg of the treated material.

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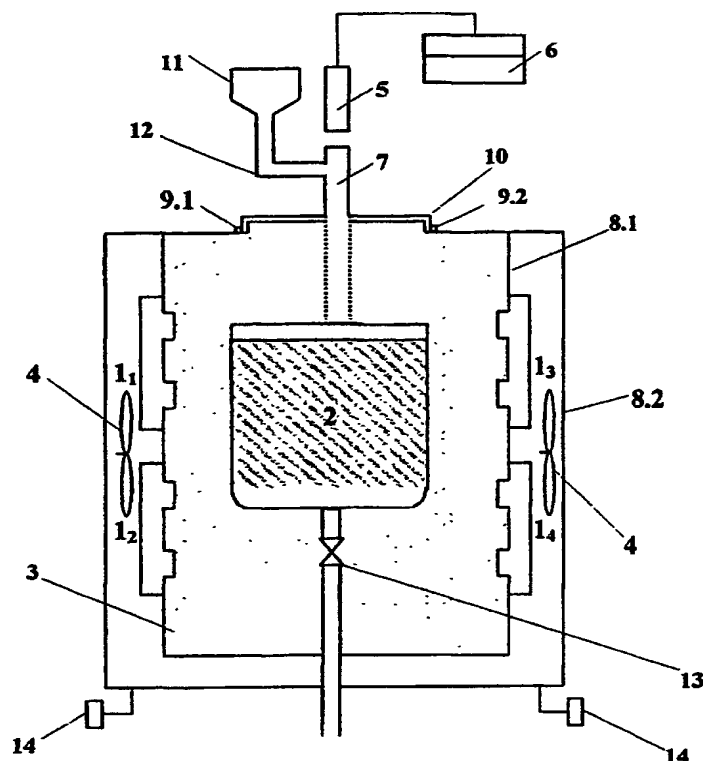
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(54) Title: METHOD AND APPARATUS FOR HEAT TREATMENT OF GLASS MATERIALS AND NATURAL MATERIALS SPECIFICALLY OF VOLCANIC ORIGIN



(57) Abstract: A method of heat treatment of glass materials and natural materials specifically of volcanic origin according to which the treated material is exposed to microwave radiation at a frequency range from 1 MHz to 10 GHz and temperature range from the ambient temperature to 1800 °C in a batch or continuous process. The glass or natural material subjected to a melting and/or refining process contains an inert additive elected from the group comprising carbides, nitrides or borides in an amount from 1 to 100 g preferably 5 to 50 g per 1 kg of the glass or natural material. The apparatus consists substantially of a microwave furnace comprising an outer shell (8.2) provided with a cover (10) and an inner shell (8.1) and at least one micro wave generator (1.1, 1.2, 1.3, 1.4) with double emission and total power from 0.1 to 1 kW per 1 kg of the treated material.

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